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ORIGINAL ARTICLES.

A CASE OF METASTATIC, EXUDATIVE, NON-PURULENT CHORIO-RETINITIS, WITH COMPLICATIONS, FOLLOWING REMITTENT FEVER.[1]

CLINICAL HISTORY BY DAVID WEBSTER, M.D., NEW YORK.

MICROSCOPICAL EXAMINATION BY H. DAVISON SCHWARZSCHILD, M.D., NEW YORK.

CLINICAL HISTORY.

Mr. Edward S. R., a literary gentleman whose home is in Brazil, came under my observation on May 30. 1890. He was a native of the United States, but had lived in Para for twelve years. He was depressed physically, by so long a residence in that warm, moist, enervating climate, and in October, 1889, he was attacked with remittent fever. The fever continued for some time and when he thought he was about well, he had a severe relapse. During this relapse he found he had to hold

[1]Read before the New York Academy of Medicine, Ophthalmic Section, March 20, 1893.

his book further off when reading. One day a black speck appeared before his right eye. He tried to brush it away with his hand, and he opened and shut his eye repeatedly, in water, but he failed to get rid of the black speck. Within a week a film had crept over one-half the visual field, and it gradually extended until the whole eye was obscured. He went to a local physician and had his eye examined with the ophthalmoscope. The physician said "Oh! it is nothing," and gave him a hypodermic injection of pilocarpine. He told him to call the next day. He did so, but the doctor failed to keep the appointment. His fever was finally cured, however, by the use of quinine, but the vision was not restored.

Right eye sees objects but cannot count fingers.

Left eye, vision $^{20}/_{xx}$; $^{20}/_{xv}$ with —0.75 D. c. axis 180°.

The ophthalmoscope showed nearly total detachment of the retina of the right eye. There was no lesion of the media or fundus of the left eye.

I gave the gentleman some advice as to his habits and prescribed spectacles as follows:

Right eye opaque glass.

Left eye, +1.50 D. s. ⌒ +0.75 D. c. axis 90°.

He returned to his home in Brazil. I did not see him again until Dec. 7, 1892, when he returned with a ripe cataract in his right eye, and no perception of light.

The vision of the left eye was $^{20}/_{xx}$ with 0.25 D. c. axis 180°.

Ophthalmoscopic examination showed a small area of dotted and stringy looking opacity of the posterior capsule of the left lens.

The patient stated that he had retained perception of light in his right eye until about a year ago; that is, until December, 1891. The cataract showed itself at about the same time. For the last month or six weeks he has experienced symptoms which caused him to be again anxious about his good eye. The blind eye has spells of feeling full or surcharged. It has a congested or suffused sensation, and at such times there is blurring of the fellow eye. The right eye is slightly, if at all,

injected, and there is no tenderness on pressure over the ciliary region. There is slight dilatation of the right pupil.

December 14, 1892. L. V. $^{20}/_{xxx}+$. $^{20}/_{xx}$ with —0.50 D. c. axis 180°.

It seemed probable that the opacity of the posterior capsule of the left lens was due to a low grade of inflammation of the uveal tract, and it was feared that sympathetic inflammation had developed.

The attacks of blurring of vision of the left eye seemed to look in that direction. I therefore advised the patient to have the useless blind eye taken out. To this he consented and I enucleated the globe on December 19, 1892, assisted by Dr. S. M. Payne and Mary E. Hennessy.

The eyeball was handed to Dr. Schwarzschild for macroscopic and microscopic examination.

July 10, 1893. Mr. R's eye has been steadily improving. The attacks of blurring no longer occur. He has returned to Brazil with an artificial eye replacing the removed one. I have since heard from him and he ceases to complain of his remaining organ of sight.

MICROSCOPICAL EXAMINATION.

The eye, delivered to me shortly after enucleation, was of large size, measuring 25 mm. in its antero-posterior and 24 1-2 mm. in its equatorial diameters; slight hypotonia; at the pupillary apperture was observed a well marked cataract apparently mature.

I placed the specimen in a fixing fluid where it remained five weeks; at the expiration of this period it was removed and divided, vertically in half.

Macroscopically; an exudation occupying the cavity of the globe consisting of super-imposed lamellæ of light flaky fibres of a yellowish color, totally devoid of tenacity. (See Fig.).

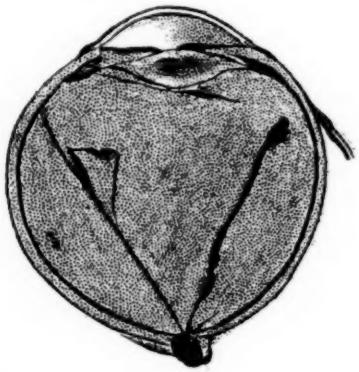
The retina is thickened and triangularly detached, the apex being the optic papilla and the base the ora serrata; it encloses and bounds the exudation internally. The left portion of the

drawing, in reality the superior, contains a smaller triangle caused by a partial loss of the mass. At the commencement of the ora serrata, inferiorly, there is seen a solution of continuity of the retina which is folded upon itself externally.

The lens is cataractous, the nucleus being more opaque than the cortex. The papilla is not perceptibly changed.

The cornea and sclera are neither thickened nor thinned.

The anterior chamber is of normal depth, and is partly filled by a light flocculent mass, less firmly embedded than that of the vitreous chamber; the pupillary aperture is round, clear and devoid of synechiæ. The posterior chamber is present and also occupied by exudation.



MAGNIFIED TWO DIAMETERS.

Pathological anatomy as observed by microscopical examination.—The exudative mass before mentioned is fibro-albuminous in character, containing in part normal and degenerated red blood corpuscles, principally the latter and exceedingly few leucocytes, in fact the number is so limited as to be devoid of significance. It is a uveal product caused by the alteration in the choroidal vessels; the retinal detachment and the laceration, ruptura retinæ, are caused by the pressure of the fluid. The retina is greatly altered, being nowhere normal; the various layers are distorted and changed. The fibre layer is considerably swollen throughout; the ganglion cells

though not as numerous as usual are, where present, increased in size. Those of the coarsely and finely granular layers are augmented in number. The supporting structure has become hyperplastic and the rods and cones are deformed through pressure. The separation of the various component structures is caused by a sero-fibrinous effusion which is found principally in the inter-granular layer; the appearance of this sacculation of the fluid, which is divided into sections by the fibres of Müller laterally, and the retinal elements internally and externally has given rise to the designation of cystic degeneration which is incorrect, as they do not possess a true cyst wall. The displacement is not uniform; in some places it is absent, in others more marked. The walls of the blood-vessels are atrophic and in portions they are perforated. Numerous small hæmorrhages exist in the fibre and inter-granular layers. At the point of rupture the retina is macerated, folded upon itself and increased to about 10 times its normal thickness, consisting here of a hypertrophic supporting tissue network, and the layers which are in a hopeless melee, are infiltrated by the sero-fibrinous effusion. The membrane is covered by the choroidal exudate and superficially permeated by it. The tissue change is that of an exudative retinitis in the stage of hypertrophy.

The choroid presents an abnormal appearance. The alteration in the walls of the vessels is marked. The chorio-capillaris is almost entirely obliterated; the medium-sized vessels of Sattler's layer are likewise diminished in number, the larger ones, Haller's, predominate. At the optic nerve entrance where the membrane is most normal, the walls of some of the vessels are thickened, orhers thinned. As we travel further they increase greatly in size, the veins disproportionally so with atrophy of their parieties, the rarefaction is in parts so extreme that an inter-vascular communication exists which predisposes to exudation, and in consequence the stroma is studded by small hæmorrhages. In places the entire width of the choroid is occupid by a dilated artery or vein; in other portions all that is seen is a strand of connective tissue with

its pigmented branches and non-pigmented cells. The retinal epithelium which varies in thickness is detached in parts; in some places only partly by serous exudation, in others completely separated and is seen in the sclera and in the mass which has replaced the vitreous; in both sites having undergone spontaneous proliferation. The lamina vitrea remains in situ even when the cells are detached; again in certain areas that also is absent leaving the choroid completely denuded. It is not adherent at all points to the sclera, being separated by exudation. The lesion is exudative, non-purulent, atrophic chorioiditis.

The optic nerve shows an increase in the number of nuclei in the connective tissue septa, demonstrating the presence of a moderate degree of interstitial neuritis. There are no effusions into the intervaginal space and no emboli in the arteria nor vena centralis retinæ.

The sclera, with the exception of localized fibro-albuminous infiltrations, is normal.

The crystalline is the seat of a capsulo-lenticular degeneration (cataracta complicata). The lens fibres are disintegraded and separated; the cortex is most affected, the nucleus being always the most resistant part. The interspaces are filled with a granular mass, coagulated fluid, in places this is formed into spheroidal bodies, the spheres of Morgagni. Immediately beneath the capsule are seen several small vacuoles, liquor Morgagni. The anterior capsule is intact; in the posterior one there is an alteration in the shape of the epithelium[2]. The zonula of Zinn is permeated by uveal exudation.

The ciliary processes are slightly atrophied; they are in part deduded of the retinal pigment and cylindrical epithelial cells, the former having undergone proliferation. The process, inferiorily, nearest the lens is elongated, due to the shrinking of

[2]The posterior capsular epithelium, it is universally conceded, does not exist normally. In this case, however, I observed a double row of cells; a few were altered in shape, but the appearance of the remaining many convinced me that they were epithelial in character. Their contour was precisely the same as those lining the anterior capsule, with which they were directly continuous.

the exudate. The connective tissue stroma is increased in density and is infiltrated by exudation, the blood-vessels are partly obliterated and the walls of those that remain are thickened. The pathology shows the alteration to be analogous to that of the choroid, differing only in degree. There is a sclerosis of the walls of the iridal vessels, and a slight effusion is visible at the ciliary origin of the iris.

The lumen of Schlemm's canal, inferiorily, is partly occluded by true connective tissue; an exudation metamorphosis. The cornea is normal. ——— The posterior epithelium—endothelium—which forms the anterior cellular covering of the iris is absent at the sinus of the anterior chamber. I do not refer to the ciliary crypts. This deficiency commencing at the site of the canal of Schlemm and extending about 2 mm. along the surface of the membrane.

The posterior chamber contains an exudation similar to that occupying the cavity of the globe. That of the anterior one is decidedly more albuminous in character and does not contain any normal and but few degenerated blood cells. It is derived from three sources: (1) the canal of Schlemm; (2) the iris at its ciliary origin; (3) the corpus ciliare passing through the spaces of Fontana in the ligamentum pectinatum.

A small non-plastic exudation is not perceptible in the recent state and coagulates only through the chemical action of reagents.

The pathological conditions mentioned and described demonstrate that the choroid and the retina are the membranes most affected; the ciliary and incipient iris changes observed are secondary to the chorioiditis, the cataracta complicata is dependent upon deficient nutrition.

The exciting cause of the inflammation described is stated by Dr. Webster in the clinical history to be remittent fever. In this condition there are no emboli to create suppuration; there is, however, a hæmic change, and the vascular walls not being sufficiently nourished undergo retrogression.

The choroid was the first to become diseased, then the retina, which, although possessing a vascular system of its own, de-

pends upon the chorio capillaris for its nourishment; the retinal vessels being situated in the inner layers only.

Interstitial optic neuritis is caused by acute febrile disease (Fuchs). The diagnosis of the lesion is therefore metastatic, exudative chorio-retinitis with complications following remittent fever.

The sympathetic inflammation in the other eye was caused by the traction of the exudate upon the ciliary processes.

This sequela being the cause of the enucleation of the diseased eye, a few words regarding the lesion are in order. The theories of Tavignat, who considered sympathetic ophthalmia a neuralgia; of H. Müller and others who regarded it as a reflex neurosis, are well known. The more recent experiments of Deutschmann, who introduced cultures of the staphylococcus into the vaginal sheath, and thereby not only caused an optic neuritis on the other side, but also a general infection of the animals operated upon, are accepted by some as conclusive. When we consider, however, that in many cases of irido-cyclitis optic neuritis is not present, and that the lesion of the sympathizing eye invariably involves the ciliary region, it can hardly be considered probable that the optic nerve sheath should be the medium of transmission. The absence of a small cell infiltration in any part of the eye examined at once negatives the bacterial theory.

The case is unique for several reasons. The irido-cyclitis in the exciting eye though of mild character and non-traumatic origin, was still empowered to create sympathetic trouble in its fellow organ. The theory of Mauthner, viz.: that when sympathetic inflammation has once developed, the removing of the exciting eye is of no avail, is refuted in this case; the sympathizing one advancing to recovery.

In default of proof to the contrary, I concur in the opinion of the other writers, that sympathetic ophthalmia is a neurosis of reflex origin.

FURTHER HISTORY OF A CASE OF MALIGNANT FIBROID OF THE ORBIT.

BY JOHN DUNN, M.D., RICHMOND, VA.

In the American Journal of Ophthalmology for December 1890, I reported a case of Malignant Fibroid of the Orbit; interesting because of the age of the patient, a negro, 19; because of its rapid growth, and because its chief structural elements consisted of fibrous tissue—although the eyeball was not attached, it was enucleated that the tumor might, if possible, be removed in its entirety. The negro disappeared from the clinic before the wound, left from the operation, healed. On December 26th 1891, I was on one of the river steamers and saw among the hands this negro. The surface of the wound had healed and although there had been much retraction in healing, owing to the fact that a part of the lower lid had been removed with the tumor, the orbit appears to be in a fairly good condition, and there was nothing that suggested an early return of the growth. On January 21st 1892 the negro appeared at the clinic with a growth which, when removed was about the size of a lemon, protruding from the orbit. He had, the latter part of December, shipped before the mast on one of the small coast schooners. Early in January the tumor had reappeared; the weather had been cold and stormy, and they had had no fire on the schooner. The growth had made rapid strides. The surface of the growth was not ulcerated as it had been before; but,although red on the surface, was encapsulated. It filled the whole orbit so as to be immovable in it. It sprung from the whole length of the lower lid involving the inner canthus. The upper lid was not involved. The growth protruded from between the lids, which were greatly stretched,

the skin over them being tense. Under chloroform the tumor was removed, the fact that it was for the most part covered with a firm capsule rendered its removal much easier than it might otherwise have been. Strong fibrous bands connected the capsule with the periosteum of the orbit above and below, especially just within the orbital border. By removing part of the upper lid and the whole of the lower lid, and with the aid of hooks and a pair of scissors the tumor was cleared everywhere except posteriorly where its adhesions were firm and strong so as to serve as a pedicle to the tumor, the pedicle as for as I could tell extending back into the sphenoid fossa. The pedicle was cut as far back as possible and everything suggesting a remnant of the growth was removed from the orbit. The periosteum was stripped in a great measure from the orbital plate of the frontal bone and also in part from the orbital plates of the superior maxillary and, perhaps, also of the sphenoid. The negro returned to have the wound dressed, three or four times and then disappeared. While enucleating the tumor, in an endeavor to get my finger around one of the bands which bound it to the orbital wall, my finger went through the sac of the tumor into what proved to be a cyst whose contents were a pulpy tissue filled with a thick juice. The growth had become a fibro-cystic sarcoma. The tumor was sent to Dr. Wm. M. Gray of the Army Medical Museum at Washington. His report at the nature of the growth was as follows:

"*Small and Large Round Cell, Giant Cell Sarcoma.*—This growth is composed of round cells of various sizes; the larger cells have a very close resemblance to epithelial cells; in number the smaller cells predominate. Scattered through the cell mass are numerous typical giant cells, also some large round or irregular shaped cells, with multiple nuclei, which have not the characteristic appearance of giant cells, being almost entirely lacking in cell protoplasm. There is very little intercellular tissue in the growth, no distinctly formed fibrous intercellular tissue; the cells seem to be connected by a finely granular material.

The growth is quite vascular, some of the blood vessels have distinct fibrous walls, others are mere channels between the cells."

On July 25th, 1892, the negro reappeared at the clinic, complaining of his inability to sleep on account of "pain in his right eye." The tumor had again grown and was beginning to bulge forward the skin of the upper lid, which now served as a covering for the orbit; for the upper lid had now grown to the lower margin of the orbit, the lower lid having been removed at the time of the last operation. Under chloroform, an incision was made from above the upper eyelid near the middle line of the face down to the inner lower margin of the orbit, across the orbit and then up across the temple for about three-fourths of an inch. The skin was then laid back as far as the supra-orbital ridge. An endeavor was then made to remove the growth from the orbit. When, after considerable difficulty and excessive bleeding, the orbit had been cleaned of all tissue as far as deemed advisable, it was seen that the grave attempt to eradicate the growth in its entirety had failed, for as far as could be made out, it has passed down behind the superior maxillary bone; it had passed through the sphenoid fissure; it had grown into the sphenoid fossa; it had sent its prolongations through the sutures, the boundaries of the ethmoid plate; *it had chosen as its points of origin all the areas of bone from which the periosteum had been stripped in the former endeavor to eradicate the growth*, and in the endeavors to remove the growth small plates of bone were torn from these places, and others could be separated from the bony plates with the finger nail.

As on the previous occasions, so on this, the negro returned only two or three times to have the wound dressed. On Dec. 9th, 1892, however, he appeared again at the clinic, saying that the tumor, after remaining quiet until the first of November, 3 months, began again to grow. His condition now was pitiable. A huge fungus was protruded from the orbit, into the margin of which the growth had sent its roots, infiltrating the skin adjacent to the orbit. The negro was suffering in-

tense pain and, although I knew anything like a complete removal was impossible, I determined to again clean out the orbit, thinking that if the negro survived the operation, it might relieve the pain temporarily and, perhaps, retard the growth for awhile. Accordingly an oval incision was made, surrounding the orbit, after which the grosser contents of the orbit were enucleated. The operation was most unsatisfactory, owing to the excessive bleeding. The tumor had now become exceedingly soft, almost like mush, and was filled with blood channels. The lower floor of the orbit was virtually all destroyed. No careful examination was made of the condition of the other walls of the orbit. Enough was seen, however, to show that the tumor had prolonged itself in all directions, especially into the sphenoid fossa. The orbit was packed with bi-chloride cotton, over which a compress was put. The negro slept well, and next day went home. The dressings were removed on the second day, when it was found that a great quantity of mucus from the nose was in the orbit, showing that the ethmoid plate had been partly destroyed. From this time on the growth increased with great rapidity, until at the end of two weeks the orbit was again filled with it, and it was beginning to protrude beyond its boundaries. Injections of pyoktanin were made into the body of the growth. These, however, had no effect in retarding the growth of the tumor.

Feb. 18th. The patient died to-day. The increase in the size of the tumor since Jan. 15th, has been little short of marvelous. It protrudes from the left orbital region like some huge knobbed fungus; it projects over the bridge of the nose so as to partly occlude the other eye; it has filled the antrum and the nose. The superficial width of the growth is 6 inches. Its thickness, measured from a plane tangent to the orbit, is about 4 inches. The negro, who, two months ago, was the picture of bodily strength, has rapidly emaciated. His skin, especially about the lips and palms of the hands, has assumed that dirty yellow color, characteristic of extreme aænmia in the full blooded negro. The pain from the growth does not

appear to have been very severe since the patient's strength began to fail. No autopsy could be obtained.

The horrid picture presented by this history suggests two questions. Is there no way to prevent the recurrence of these growths after the first operation? Why do not the growths reappear immediately after operation, but seem to have a period during which they are preparing themselves for a change of structure and a more rapid growth? This tumor became less and less solid after each recurrence, until at the time of the last operation it seemed to be chiefly a mass of large intercommunicating blood channels. During its last growth its capacity for bleeding under the slightest injury became so great that manipulation was impossible. Copious bleeding would follow the jab of a fine hypodermic needle. At the time of the operation in this case, the eye, although perfectly healthy, was removed with the tumor, in hopes that the eradication of the tumor might be complete. It failed, and just here the suggestion comes in that possibly had the area of origin of the tumor, at its first appearance after the operation for removal, been thoroughly cauterized with the galvano-cautery, and this repeated two or three times if necessary, after the burnt area had healed, it might have succeeded in preventing a recurrence of the growth. It will certainly be given a trial should a similar case present itself in the future. The negro disappeared, however, too soon after the removal for this to be tried this time.

CORRESPONDENCE.

OPHTHALMOMETRY IN THE UNITED STATES AND ITS CHAMPIONSHIP.

EDITOR AMERICAN JOURNAL OF OPHTHALMOLOGY:

SIR.—In your Journal of January of this year there appeared a communication from Dr. Swan M. Burnett, in answer to a letter from me published in the *New York Medical Journal* for September 24th, 1892. In this article Dr. Burnett charges me with having made "many misstatements and misrepresentations" in my letter. Certainly this requires an answer from me. I ask, therefore, Mr. Editor, an opportunity to be heard in reply.

My youth seems to have been a matter of reproach on the part of Dr. Burnett, but I think you will agree with me that the subject which we are discussing is one in which personal contentions have no place. At the very outset, allow me to say that I believe I shall be able to show that whatever may have been the case with Dr. Burnett's statements, that I have not been guilty, as he thinks, of any misrepresentation. If it can be shown that I have been it is unwitting, and I shall take great pleasure in making a proper correction.

First—Dr. Burnett creates a wrong impression when he says "It must be admitted, however, that Dr. Davis now, for the first time, concedes priority of first description and first use of the ophthalmometer to the Barbarian outside the walls, etc." In saying "for the first time," he implies that I have written more than once concerning the championship of ophthalmology. This is not the case; I have written but once on the subject of the *championship*. However, the first and only

letter seems to have demonstrated the fact, Dr. Burnett to the contrary, that the championship of ophthalmometry in America is a matter of a very great deal of concern to some other oculists, besides a certain set in New York; that is, if we are to judge from the number, the celerity and vehemence of the replies to this letter of mine. This letter, I wish to say, although Dr. Burnett has seen fit, with what seems to me questionable taste, to make somewhat unpleasant allusions to Dr. Roosa in his reply was, like that of Dr. Hunter for Dr. Noyes, written of my own free will and suggestion, to attempt to do justice to one of my teachers and friends.

I regard the following as a misstatement also. Dr. Burnett says: "I do not allude to the attempt to associate in the same category Dr. Landolt, who is not an advocate or a friend of the instrument, and myself, who am both, by garbled extracts from our writings." It seems as if Dr. Burnett has two ways of looking at a quotation, depending wholly upon the fact whether the quotation is made in his favor or against him. The quotation from Landolt in my letter was taken *verbatim et literatim* from an abstract of a paper by Dr. F. B. Eaton, published in the *Medical Record* for November 12, 1893. If Dr. Burnett claims it to be a garbled quotation, Dr. Eaton is the responsible party. But Dr. Eaton used this very quotation, word for word, to show wherein Dr. Landolt was incorrect in his opinion concerning the ophthalmometer. This is shown by his comment quoted by me. It is not used to show its great similarity, in word and thought, to a certain full paragraph quotation from "le premier champion" (Javal). Dr. Eaton was spared a public censure for "garbled quotations." After all, it does make a difference whether a quotation is in our favor or against us. So much for Dr. Eaton's quotation from Landolt.

Now as to the quotation from the *Treatise on Astigmatism*, to which Landolt's was compared. All I have to say is, I quoted a full paragraph of a dozen lines (in no way marring the sense) which for a short letter was quite sufficient, for it fully presented Dr. Burnett's views on this point. Dr. Burnett continues:

"But when he (Dr. Davis) goes on further and says that in fact Burnett, in his first paper on ophthalmometry, gave drawings made from measurements of the cornea by the disc of Placido, in some respects he claimed it to be superior to the ophthalmometer, the long suffering of the Barbarian even must give way. I will quote, Mr. Editor, exactly what I did say, and what can be found on page 171 of that paper: "No other form of keratoscopy can be compared to it (the ophthalmometer) for precision and accuracy. I have used Placido's disc and Wecker's squares, and must confess that I found them worthless in regular astigmatism. The statement of Dr. Davis is wholly the product of his fertile imagination."

I make this rather long quotation so as to present clearly the statements to the reader, and, incidentally, so as not to be charged with "garbling." Dr. Burnett's misstatement here is the assertion that the statement of Dr. Davis is wholly the product of his fertile imagination." The misrepresentation consists in the fact that Dr. Burnett garbled from his own paper, and did not quote sufficiently from that paper what he did say about the disc of Placido, to show his true position.

Part of my statement was that Dr. Burnett "gave drawings made from measurements of the cornea by the disc of Placido." This he admits on page 5 of his letter, to-wit: "The measurements of the ophthalmometer, which furnished a clue to the *regular* (italics mine) astigmatism associated with it (a case of keratoconus) are given, however, with laudatory praises of the instrument without the *aid* (italics mine) of which it could not have been done." However, had he not have admitted it here, he did so on page 174 of his first paper. (1) "As we always have a certain and usually a very large amount of irregular astigmatism in kerato-conus, I made careful measurements of both eyes of Mrs. R. with the disc (Placido's, of course)." Part of my statement, therefore, I show, by his own words, is not *wholly* the product of my imagination.

Now for the other part of my statement: "in some respects

[1]Archives of Ophthalmology, 1885, vol IV. Nos. 2 and 3, page 174.

he claimed it to be superior to the ophthalmometer." I still say so. He virtually and actually admits the fact in the quotation from page 5 of his present letter, just made above. He says the ophthalmometer gave him a clue to the regular astigmatism. But how about the *irregular* astigmatism? Why, the disc of Placido pointed it out to him, of course. The ophthalmometer was an *aid*. Something must have been of prior or superior importance to it then in measuring irregular astigmatism and in making keratoscopic drawings, or why was it only used as an aid? That something in this case was the disc of Placido. In this letter, however, is not the only place Dr. Burnett has committed himself on the superior value of the disc of Placido. For, if Dr. Burnett had continued to read his first paper (²) from page 171 to page 173, he would have found the following quotation from himself, and would not then have attributed to my imagination the credit for that which he himself had written: "Javal has added a Placido's disc to his instrument since 1881, and it has increased its value very much for the determination of *irregular* (italics his) astigmatism. I had found the disc of Placido very useful for this purpose, and by it have discovered varying degrees of irregular astigmatism in many cases where V could not be brought up to $^{20}/_{20}$ by any optical means." So it would seem again "in *some* respects," the disc of Placido is superior to the ophthalmometer (no question whatever so far as the "old model" is concerned).

Now I am sorry I did not put that little word *some* "in italics, in red ink," and a red candle at each side of it. It would have saved Dr. Burnett a serious blunder in his statement. But a very patent fact—one requiring neither italics, red ink, nor capital letters, for that—brought out by the quotations from Dr. Burnett in this letter concerning the disc of Placido, and in my first letter concerning the ophthalmometer is, that Dr. Burnett having at one place is his writings spoken very lightly of either of these instruments is no indication whatever that he has not in another place (sometimes in adjoining paragraphs), spoken disparagingly of them.

²Already referred to in the Archives of Ophthalmology.

Dr. Burneet objects to enthusiasm, but I beg here to present what was said by Dr. D. Schweinitz in his paper, that brought out my letter which Dr. Burnett has so severely criticized, in regard to my description of the method of using the ophthalmometer. "The most recent communications on the subject in this country are the papers of Dr. Davis, containing as it seems to me, the best practical directions for using the instrument accurately." This is irritating enthusiasm, no doubt, to a man who has labored so long and written so much about the ophthalmometer, to have "the ophthalmological youth" credited with the best description of the instrument.

I must confess also that I like a man who has the courage of his convictions, and whose language is sufficiently enthusiastic in only one direction, to at least place him on one side or the other of the fence, and not on top of it. It is "faint praise" indeed to go to both extremes. And when he says on page 3 of his letter that he has been in the habit of "always speaking of it (the ophthalmometer) in great praise," I beg to differ. His praise, great or faint, failed to give the profession of this country any adequate idea of the value of the instrument. We have admitted and quoted him to the effect that he has sometimes lauded the ophthalmometer, but not always, as is shown by comparing a certain quotation from his book to a similar one from Dr. Landolt's, which he does not seem to like at all. I think the straight dart of enthusiasm struck this "boomerang" of both extremes about mid-ship.

Dr. Burnett also thinks there is an implied slur in the following paragraph in my letter: "Dr. Roosa took a discredited instrument and brought it into wide use and good repute," and asks, "who brought it into discredit?" It *was* in discredit in 1888, because it was known only as a subsidiary means of diagnosis or not at all. The truth of this statement I will substantiate by no less an authority than the distinguished discoverer of anæsthesia by cocaine, Dr. Koller, to whom Dr. Burnett has already so justly referred to as pursuing the middle ground of truth. Dr. Koller ([3]) even so late as 1890, has

[3]Journal of the American Medical Association, 1890, xv, p. 380.

this to say: "When two years ago (1888) I came to this country, which is so ready to adopt new and good methods, I found the ophtholmometer comparatively unknown." This is unbiased evidence, Mr. Editor. This country which is so ready to adopt new and good methods, *when* known, are equally ready to discredit methods that remain comparatively unknown long after their invention. Such was the state of facts in 1888. Though the instrument had been used for more than three years by Drs. Burnett and Noyes, it was given only secondary importance and was comparatively unknown, and, therefore, discredited. The truth may hurt, Mr. Editor, but it can not slur.

As to the difference between the "old" and the "new" model instruments. I am aware of the fact that the cardinal points of the old and new models are similar, and that theoretically, a description of the "old" will answer for the "new," for men who *already* understand both models. But, if everybody already understood both models, what would be the use of a description at all? Practically then, for teaching men who do not *already* understand both models, the description of the old model to apply to the new model is a poor one, and essentially bad. I think that beginners will bear me out in this statement.

Lastly—the champion. Though cognizant of the fact, when writing my first letter, that Dr. Javal had designated Dr. Burnett "le premier champion," owing to the qualification "le premier," which I took to be a chronological qualification, I let it go by. But when Dr. de Schweinitz unqualifiedly designated him champion, implying not only priority, but the man who had done most to bring the instrument into practical use, as the one who had actually championed it, I thought it time to point to another man, Dr. Roosa, who had caused more ophthalmometers to be bought and used and had done more by his *practical* teaching to popularize the instrument than any one man, or any six men, in America. But mere statements amount to nothing unless they can be proven. And now the proof.

For three years or more the instrument was talked about in some societies by those who introduced it, and at the end of that time, in 1888, by distinguished authority, it was declared to be comparatively unknown. And, what is more, it was unused, except by a very limited few; a statement which I made in my letter to the *New York Medical Journal.* This assertion was not even questioned, let alone denied, by either Dr. Hunter or Dr. Burnett. This demonstrates to the profession that the ophthalmometer was not popularized, in fact, hardly heard of, in America so late as 1888. Until the Autumn of 1892, ophthalmometers could only be obtained in this country by importation. Through Dr. Roosa's efforts, continued for a year, Messrs. Georgen & Halin first, and Meyrowitz Brothers second, in New York, manufactured and sold more than sixty instruments, exactly as perfect as those made in Paris. Dr. Roosa believed, as soon as he knew the value of the ophthalmometer, and this belief I share, that no oculist ought to prescribe for errors of refraction without the aid of an ophthalmometer. Did Dr. Burnett, or any other champion, ever indicate or act upon such a belief as this? Why was it that from 1885 to 1889 the value of the ophthalmometer was unknown except to a very few? In my final paragraphs I think I shall show that Dr. Burnett does not, even to this day, know its full value. In 1889 Dr. Roosa placed an instrument in the Manhattan Eye and Ear Hospital (to which another has been added since, also to the Post-Graduate school, through my influence) and he began to demonstrate the use and practicability of the instrument in the clinic-room the year round, to large classes of practitioners. These men were placed in possession of the instrument and taught to use it. Although Dr. Roosa had used this instrument in his private practice for a year before this, he does not consider that he began to make its use known until he did so in his class-rooms. I do not consider any allusions to it, that may have been made in a college a mile away from an ophthalmometer and consequently without a demonstration, as of any practical value in making this instrument known, or as any championship. Until Dr. Roosa's work, its

use was taught in this way only in New York. Not a single medical college, or ophthalmic institution taught its use. His teaching was practical. The number of ophthalmometers sold since 1889 show that it was popular. While, without question, the influence of other writers in America has helped to bring the instrument into esteem and actual use, yet by the influence of one man more than any other, it has been popularized.

The championship in my opinion depends upon an advocacy that has never ceased, upon work and results from it, and not upon the fact that a certain writer was the first in America to describe an ophthalmometer.

The same year (1887) that Dr. Burnett (4) treated on astigmatism the "Reference Hand Hook of Medical Science" contained a description of the ophthalmometer with a picture of it. Article, Optometry, by Dr. John Green. Dr. Burnett is not mentioned in this article.

Dr. Green thus divides with Dr. Burnett, the honor of giving what Dr. Burnett believes to be "the first description of the instrument in English."

Dr. Burnett, however, seems to think I set forth the real claim to a championship in the closing paragraph of my letter where I state that Dr. Roosa demonstrated its (the ophthalmometer) great practicability, not only in cases of aphakia, *but in all cases of refraction.*" He remarks also upon the italics. If Dr. Roosa's claim to the championship was not already, as I believe, established by the foregoing evidence, I should be perfectly willing to let it rest on the closing parapraph of my letter. Furthermore, Mr. Editor, to use Dr. Burnett's style, I am sorry those italics were not in red ink, or capitals with stripes on them. They would not have been, even then, too plainly set forth for the intelligent comprehension of one of my readers. He is obtuse, indeed, who cannot appreciate the value of the ophtholmometer *in all cases of refraction.* True science has a *negative* as well as a positive side, a fact well known to

4Wm. Wood & Co.

many who have no knowledge of physiological optics and know nothing of the ophthalmometer. In general medicine, for instance, by exclusion (a negative procedure) a diagnosis is often arrived at that could not possibly have been attained otherwise. So with the ophthalmometer. It is of value, negative or positive, in every case of refraction, and I never fail to make use of it. In those cases where there is corneal astigmatism it discovers it. In those cases where there is no corneal astigmatism—in hyperopia, myopia and lenticular astigmatism—it excludes it. A matter, by the way, of a very great deal of importance to those who value time, and who wish to know for certain if or if not corneal astigmatism is present. The instrument is, therefore, of great value, even in simple cases of hyperopia and myopia, by the mere fact of its excluding corneal astigmatism.

Dr. Burnett does not understand the point of our contention. I gave him the credit for having first in America described and praised the ophthalmometer. But he made so many exceptions to its value, he took such pains to expressly state "that no method should be relied on exclusively; and no diagnosis of astigmatism should be considered as fixed until it has been verified by an examination with cylindrical glasses and test types ([5]) that his words made very little impression on the oculists of this country.

It is indeed extraordinary that Dr. Burnett has not long since found my statements to be truisms in regard to the great value of the ophthalmometer in "all cases of refraction." As Dr. Roosa has taught in his papers if the presence or absence of corneal astigmatism be once established, with its degree, if present, all necessity for the use of atropia or similar agents is at once done away with. Except in very rare cases, the degree of hyperopia or myopia can easily be learned without a mydriatic, and we are ready at once to prescribe glasses.

If Dr. Burnett has used the ophthalmometer for eight years without learning this, he has missed the whole point of its

[5]Treatise on Astigmatism, page 136.

value. It is easy to see from his writings that he has done so, and that he has been a champion, if at all, of an instrument, the full value of which he never understood. To use the ophthalmometer and then to resort to atropia or homatropine or retinoscopy or Placido's disc, is to show that we regard its value far below that accorded to it by Helmholtz and Javal and Schiötz and G. J. Bull of Paris, and by those who have brought it into general use in our country.

In the light of Dr. Burnett's confessed ignorance of the real value of Javal's instrument, far beyond its capacity to determine the presence of astigmatism, in all cases of refraction, not directly, of course, but indirectly, and in consequence of exact determination of the presence or absence of the most important of all errors, I can afford to pass by in silence, his sarcasm and merriment upon the knowledge of physiological optics, thought to be possessed by Dr. Roosa and myself, and his sneer at the "ophthalmological youth."

I am constrained to believe, in spite of his merriment, that a pilgrimage to New York, where the use and value of the ophthalmometer are properly and fully taught, would increase his knowledge, and possibly cause him to be temperate and courteous in discussion with a fellow member of a learned profession.

A. EDWARD DAVIS, M. D.

NEW YORK, March 18, 1893.

OPHTHALMOMETRY IN AMERICA.

EDITOR AMERICAN JOURNAL OF OPHTHALMOLOGY:

DEAR SIR.—There is nothing in Dr. Davis' long letter in this issue which has not, I think, been fully met in my communication in the number for January. At least I am content with the statement of the facts, and am sure the profession have had more than a sufficiency of this ophthalmometry farce.

There is one person, however, who is entitled to a hearing on all things pertaining to the practice or history of ophthalmometry and that is the genial gentleman to whose ingenuity and patient labor we are indebted for the instrument. The following letter from Dr. Javal, which he has asked to have published, was written by him before he had any knowledge that I intended to reply to Dr. Davis' communication, and is his free will offering towards a settlement of the question. Here is a translation of the letter:

[TRANSLATION.]

51 RUE DE GRENELLE, PARIS, 24/2, '93.

MY DEAR COLLEAGUE.—An unknown friend has sent me a copy of the *New York Medical Journal* of 24th of December last, containing a letter from Dr. A. E. Davis on ophthalmometry in America. The object of that letter is the establishment of Dr. St. John Roosa as the "champion" of ophthalmometry in your country.

I recognize the obligations we are under to Dr. Roosa for his encomiums on the ophthalmometer and I have the highest regard for his recent publications on the subject of refraction, but it appears to me that Dr. Davis fails utterly by his misconception of the part you have played, and for this reason his letter has given me great chagrin.

Since 1883 you have pointed out the usefulness of the ophthalmometer, and you have never withheld your advocacy of it when ever any opportunity offered. I believe that your articles, so thorough and yet so moderate in tone, have been largely instrumental in extending the use of an instrument which is now more popularized in your country than in Europe. When you deemed the cause of ophthalmometry firmly established you gave your attention to other subjects without attempting to surround your name with an atmosphere of humbuggery. It is for this reason that I cannot let Dr. Davis's letter go by without extending to you my renewed thanks and cordial sympathy. DR. JAVAL.

I think, in the interest of ophthalmometry, it should be known, and I have Dr. Javal's authority for the statement, that the only ophthalmometers to be had in this country which have been verified by Dr. Javal himself are those on sale by Borsch in Philadelphia. It should also be added that the price of these instruments now, in spite of "le Bill McKinley," is not above those of equal goods—if there be any—which are manufactured or constructed in this country.

With thanks for your courtesy I am yours very truly,

SWAN M. BURNETT.

SOCIETY PROCEEDINGS.

XITH INTERNATIONAL CONGRESS OF MEDICINE TO BE HELD AT ROME, SEPTEMBER 24 TO OCTOBER 1, 1893.

The Secretary General of the International Congress, Prof. E. Maragliano, is anxious to have the medical profession of this country thoroughly represented at the meeting in Rome. So that all physicians who anticipate going may be familiar with the details of this great meeting, we give here a complete

outline and synopsis of it. Those who intend to participate in the Congress should communicate with the American national committee through its chairman, Dr. A. Jacobi, 110 West 34th street, New York. Application should be made at an early date. The admission fee of $5 may be sent to the treasurer, Dr. L. Pagliona, Rome, Italy, or Dr. Jacobi, who has kindly offered to forward any applications or fees sent to him.

The inauguration of the Eleventh International Congress will take place the 24th of September, 1893, in the presence of H. M. the King of Italy.

The work of the Congress will begin in the nineteen sections on the morning of the 25th of September. It will be continued in accordance with the arrangements to be made and published both for the general sessions and the sections. Some of the general sessions will be devoted to scientific addresses delivered by scientists of all nations.

LIST OF THE SERIES.

1. Anatomy.
2. Physiology.
3. General Pathology and Pathological Anatomy.
4. Pharmacology.
5. Internal Medicine.
6. Diseases of Children.
7. Psychiatry, Neuropathology and Criminal Anthropology.
8. Surgery and Orthopedy.
9. Obstetrics and Gynæcology.
10. Laryngology.
11. Otology.
12. Ophthalmology.
13. Odontology.
14. Military Medicine and Surgery.
15. Hygiene.
16. Sanitary Engineering.
17. Dermatology and Syphilidolgy.
18. Forensic Medicine.
19. Hydrology and Climatology.

REGULATIONS.

1. The Eleventh International Congress of Medicine will be inaugurated in Rome on the 24th of September, 1893, and will close on the 1st of October.

2. Any physician may become an active member of the Congress by fulfilling the conditions of membership, inscribing his name, and securing his admission ticket.

3. Scientists of other professions who, through their special studies, are interested in the labors of the Congress, may acquire the rights and assume the duties of active members, and participate in the work of the Congress, both by communications and discussions.

4. The fee for admission to the Congress is twenty-five francs or $5. It entitles to a copy of the Transactions of the Congress, which will be forwarded to the members immediately after publication.

5. The character of the Congress is strictly and exclusively scientific.

6. The work of the Congress will be divided amongst nineteen sections; every member is requested to indicate, on paying his admission fee, the section for which he desires to be inscribed.

7. The provisional committee will arrange the appointment, in the opening session, of the permanent officers. There will be a president, three vice-presidents, a number of honorary presidents and secretaries. Each section will elect, in its first meeting, its president and a certain number of honorary presidents, who shall alternately take the chair during the session. Some of the secretaries will be chosen from among the foreign members in order to facilitate the recording both of communications and of discussions in the different languages.

8. There will be daily sessions, either general or sectional. The times and numbers of the general sessions, and the business to be transacted in them will be arranged by the president of the Congress.

9. The general sessions are reserved (a) for the consideration of the common work of the Congress and of its common

interests; (b) for addresses and communications of general interest and importance.

10. The addresses in the general sessions, and in such extraordinary sessions as may be arranged, will be delivered by the members chosen by the committee for the purpose.

11. Papers for and communications to the Congress must be announced on or before June 30, 1893. A brief abstract of every paper and communication, with their conclusions, must be sent to the committee on or before July 31. All of them will be printed and distributed to the members by authority of the president. Such as arrive after that date cannot be expected to find a place on the regular order of business, and will be accepted only if time will permit.

12. The business of the sections will be arranged by their presidents, who will also determine the hours of meeting, avoiding those reserved for the general sessions. Two or more sections may hold joint meetings with the consent of their presidents. There will be no vote upon scientific questions.

13. Fifteen minutes will be allowed for the reading of a paper or communication. In the discussion every speaker can have the floor but once, and for five minutes only. To close the discussion the author of the paper is allowed ten minutes. Additional time may be given him by the president, by special resolution of the section, if the importance of the subject under discussion appears to require it.

14. The manuscript of all addresses, papers and communications read either before a general session or a section must be handed to the secretary before the close of the meeting. A special committee on publication appointed by the president will decide which or what part of them shall be published in the Transactions of the Congress. Such members as participated in the discussions are required to hand to the secretaries their remarks in writing.

15. The official languages of the sessions are, Italian, French, English and German. The regulations, programmes and daily bulletins will be published in the above four languages. During the meetings, however, a member may be permitted to

use, for a brief remark, any other language provided some member present expresses his willingness to translate such remarks into any of the official languages.

16. The president directs the discussions according to the parliamentary rules generally obeyed in similar assemblies.

17. Persons not classified under Article 3, who are interested in the labors of a special section, may be admitted by the president of the Congress. They will receive a special ticket on paying their admission fee; will not be entitled to a copy of the Transactions, and cannot speak in the general sessions nor in any section other than that for which they were inscribed.

18. The president may invite or admit students of medicine to attend and to listen. They will be given a special admission ticket, free of charge.

GENERAL INFORMATION.

JOURNEYS AND REDUCTION OF FARES.—The provisional committee has made arrangements with the different Italian and foreign railway and navigation companies, in pursuance whereof special reduced prices have been granted on the steamers and railways of this country and of the countries which the members of the Congress are to traverse.

In Italy the members of Congress will find tickets for round trips, starting from Rome; they will thereby be entitled to visit the most important cities and the various universities. In regard to this further notice will be given.

THE LADIES OF THE MEMBERS will be furnished ladies' tickets, which will entitle them to the reduced fares granted to the members, and to participate in the festivities connected with the Congress.

FESTIVITIES.—Besides the receptions which the kind and hospitable citizens of Rome will offer to the members, the Italian colleagues will endeavor to return to the best of their power the kindness they experienced during their stay abroad.

On some evening yet to be decided, the members of the different sections will join at a dinner which will be given in one of the first hotels of Rome.

The Italian physicians have formed special commjttees to show the most hearty and kindly hospitality towards the foreign colleagues.

INTERNATIONAL EXHIBITION OF MEDICINE AND HYGIENE.—On the occasion of thc Eleventh International Medical Congress, and exhibition of Medicine and Hygeine will be inaugurated in Rome, which will gather all that may practically interest physicians and specialists. A special committee has already insured the co operation of all the most important manufacturers of the world.

HOTELS.—All the first and second-class hotels of the Italian capital will afford to members, during their stay, all desirable comforts.

NEW BY-LAWS PAN-AMERICAN MEDICAL CONGRESS.

LANGUAGES.—BY-LAW IX: Papers may be read in any language providing that authors of the same shall furnish the Secretary-general with an abstract not exceeding six hundred words in length in either of the official languages (English, Spanish, French or Portuguese), by not later than July 10th, 1893, and providing, further, that a copy of each such paper shall be furnished in either of the official languages at or before the time of meeting to the secretary of the section before which the same shall be read. Remarks upon papers may be made in any language providing that members making such remarks shall furnish a copy of same in either of the official languages before the adjournment of the session.

PUALICATION.—BY-LAW X: All papers read either in full or by title shall be immediately submitted for publication in the Transactions (special regulation 3) but authors may retain copies and publish the same at their pleasure after the adjournment of the Congress.

CONSTITUENT ORGANIZATIONS.—BY-LAW XI: All medical, dental and pharmaceutical organizations, the titles of which

have been transmitted with approval to the committee on Organization, or which may hereafter be transmitted with approval to the executive committee by any member of the International Executive Committee, each for his own country, shall be subject to election by the executive committee, approved by the president, as constituent bodies of the First Pan-American Medical Congress, and each organization thus constituted shall have the right to designate as delegates all of its members attending the Congress, but no such organization shall meet at the time and place of meeting of the Congress as a distinct body; providing, that the secretary of each of such constituent body shall furnish a list of officers and a statement of the number of members of his respective organization to the Secretary-general not later than sixty (60) days before the meeting of the Congress, and shall forward a list of delegates chosen to reach the Secretary-general before the opening of the Congress.

By the Executive Committee, February 22, 1893.

THF CHICAGO MEDICAL PROFESSION ON THE WORLDS FAIR ENTERTAINMFNT.

At a meeting of the joint committee of the Chicago medical profession on the World's Fair Entertainment, held at the Sherman House, November, 1892, the establishment of a Bureau of Information and Service was delegated, with approval and endorsement, to Charles Truax, Greene & Co., the committee reserving to itself the duty of such social entertainment of visiting physicians during the coutinuance of the Exposition as may seem desirable.

This action was confirmed at the final meeting of the joint committee, February 25, 1893; and, on application of the Practitioner's Club and the South Side Medical Club, the matter of social entertainment was delegated to them, with full authority to act in the capacity of entertaining bodies, with

the retention of the chairman and its American and Foreign secretaries already appointed.

Chairmen.—Drs. Charles Warrington Earle and Archibald Church.

American Secretaries.—Drs. George H. Cleveland, John C. Cook and J. C. Culbertson; British, Dr. Sanger Brown; German, Dr. F. C. Hotz; French, Dr. Fernand Henrotin; Spanish, Dr. E. J. Gardiner; Italian, Dr. A. Lagario; Swedish, Dr. K. Sandberg; Canadian, Dr. R. D. McArthur; Russian, Dr.———

The scope and duties of the above secretaries will be designated in the future.

C. WARRINGTON EARLE, M.D., Chairman.

AMERICAN MEDICAL ASSOCIATION.

DEAR DOCTOR.—The time for the annual meeting of the American Medical Association is so near at hand that all members who wish to contribute papers must send the title of their paper to the secretary before April 25, in order to have them appear in the general programme and in order to make arrangements for discussion. It is also urgently requested that brief abstracts be furnished not later than May 15, in the form in which the authors wish them to appear in the preliminary report of the meeting. The announced communications as well as the names of those who have promised to attend, assure the sdccess of the next meeting. In view of the historical interest, which the Columbian celebration lends to the meeting, it is highly desirable that American ophthalmology should be well represented by the names and presence of those who have contrieuted to its present advanced position.

S. D. RISLEY, M.D., Chairman,
1722 Walnut St. Philadelphia.

H. GRADLE, M. D., Secretary, 65 Randolph St., Chicago.